

Novo Nordisk A/S stops growth in carbon emissions

While maintaining growth in business

Since 2003, Novo Nordisk A/S has been optimising and improving the efficiency of its production through cLEAN® - the company's own version of Lean - and a climate strategy. As a result, the company has curbed its carbon emissions and has added millions of DKK to its bottom line.

Improved energy efficiency with cLEAN® and a climate strategy

Novo Nordisk A/S is improving its energy efficiency in step with a growing business. An obvious boon to the environment, the company believes, and attributes the results to two large initiatives in particular, a Lean programme and a climate strategy.

cLEAN®, which has run since 2003, is Novo Nordisk's own version of the methods of process optimisation commonly known as 'Lean'. Increased productivity is the main purpose, and although efforts are not driven by environmental considerations, the programme has reduced the company's energy consumption per unit produced considerably. If cLEAN® had not been launched, carbon emissions from production at Novo

Nordisk A/S would have been three times higher in 2014 than in 2004 (see figure 1.) In the long term, the savings achieved from cLEAN® will account for two-thirds of total savings.

The other initiative is the company's ambitious climate strategy, which was launched in 2006 collaboratively with the WWF Climate Savers programme. The company's official target in this strategy is to curb its carbon emissions by 10% in the period 2004 to 2014. Taking into account the growth in the company's production in the same period, this corresponds to an actual reduction in carbon emissions of no less than 65%. The target will be met through energy savings and more renewable energy.

Wasting energy is costly

In brief, Lean is about eliminating waste of any kind, including waste of natural resources. Wasted energy represents an extra cost and is one of the areas in which Novo Nordisk A/S has concentrated its efforts. The concept of cLEAN® (current Lean) was developed and trademark-registered by Novo Nordisk A/S itself, so that it can be continuously developed by and held in line with the company's needs.

cLEAN® responsible for two-thirds of cuts in carbon-emissions

Novo Nordisk A/S estimates that two-thirds of the CO₂ reductions that the company aims to achieve in the period 2004 to 2014 will be provided through cLEAN®. Part of these reductions is due simply to the fact that the efficiency of production has been improved to the extent that the establishment of extra factories to meet the increasing demand for insulin is no longer necessary. Production has been made more efficient through process optimisation and removal of bottlenecks, so that it is now possible to produce more output from the same plant.

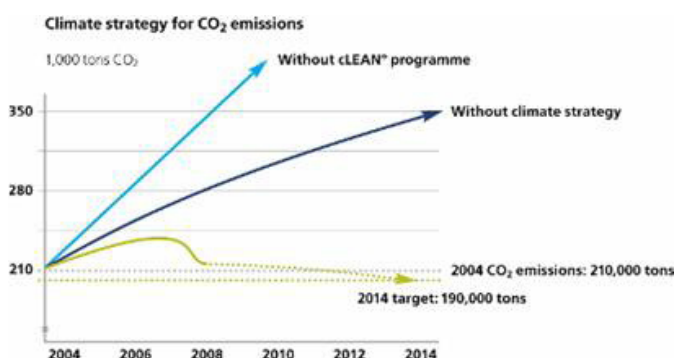


Figure 1



At the insulin factory in Kalundborg on Sealand, cLEAN® methods have been applied to save energy. The factory has reduced its energy and water consumption by 20% using the cLEAN® tool Value Stream Mapping. The value stream mapping revealed large amounts of wasted electricity, water and steam in the processes. This waste was cut, amongst other things by reducing the number of times pipes and tanks are rinsed out, and through better regulation of the steam temperature.

Double the turnover with the same number of staff. The financial benefit is also very tangible. Turnover has almost doubled to around DKK 45 billion since the cLEAN® programme was implemented, while the number of staff has remained the same. Energy consumption has been increasing slightly over the same period, however it fell by 9% from 2007 to 2008. In 2003 costs were 28.3% per product sold. In the first six months of 2009, this figure had dropped to 20.1%, which signifies a substantial saving, since one percentage point corresponds to around DKK 450 million.

Employees are important for success

After implementing cLEAN®, at first management concentrated on the technical part of efficiency improvement efforts, however they quickly realised that employees were an equally important aspect, if the cLEAN® programme was to be a success. Backing and involvement from energy managers in the production is vital for the success of the strategy.

Mandatory courses in cLEAN® for everyone

As part of involving the individual employee, Novo Nordisk A/S is sending all new employees on a step-1 course in cLEAN®.

Managers follow separate courses, where they receive training in purely technical aspects of efficiency improvement, but also in how to motivate and involve employees, because both factors are decisive in enhancing production and efficiency.



Facts about Novo Nordisk A/S

- A world-leader in diabetes treatment
- Subsidiaries and offices in 81 countries
- More than 29,000 employees globally
- Turnover: approx. DKK 45 billion (2008), (EUR 6 billion)
- Energy consumption: 2,533,000GJ (2008)
- Carbon emissions: 215,000 tonnes (2008).

As much as 28,000 tonnes less CO2 due to energy savings

In addition to its cLEAN® efforts, Novo Nordisk A/S is giving special priority to energy savings as part of its climate strategy. So far with great results. From 2005 to 2009, Novo Nordisk A/S reduced its overall carbon emissions by 28,000 tonnes of CO2 through determined energy-saving efforts. The energy bill has moreover been reduced by double-digit millions DKK - despite double-digit growth for the company in the same period. Half of the energy-saving projects will have paid back their investment in less than a year, and several can even be implemented without investment.

In 2008, the rising carbon emission curve was broken, and by the end of 2009, emissions had been reduced to the 2004 level.

Ventilation fans now sleep at night

When Novo Nordisk A/S first embarked on its climate strategy, the company's first move was to make an energy consumption survey to identify the best energy-saving projects. Since 2005, 200 such projects have been carried out. An early discovery was that huge amounts of energy were being spent on ventilation, cooling and high-pressure air, which account for about 50% of energy consumption, and saving efforts were consequently launched. For example, great savings have been achieved by shutting down ventilation fans at night, when they are not needed.